



# Essential Epidemiology: An Introduction for Students and Health Professionals, Third Edition

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## BOOK REVIEWS



***Essential Epidemiology: An Introduction for Students and Health Professionals, Third Edition.*** By Penny Webb, Chris Bain, and Andrew Page. New York: Cambridge University Press; 2017. US \$59.99 (Paperback). 494 p. ISBN: 978-1107529151

The book introduces students and health professionals to the fundamental principles of epidemiology, including the study of diseases, determinants, and the application of this knowledge to control relevant health problems. It contains sixteen chapters with creative titles like “All that glitters is not gold: the problem of error (Chapter 7),” and “Who sank the boat? Association and causation (Chapter 10).” The authors make the material accessible by using minimal jargon. They include questions to engage the reader in applying the material.

Chapter 1 introduces the reader to epidemiology and the notion that it can be a bit like detective work in finding out why and how disease occurs. One even learns about “shoe-leather epidemiology,” a term that can be used when the epidemiologist travels around to interview people (presumably wearing out their shoes in the process). Various symbols are used throughout the book as explained in the preface. For example, the stethoscope symbol highlights specific cases more relevant to the clinical situation, like terminology used in clinical trials as reviewed in Chapter 2. Real life examples from around the world make the material relevant and relatable, like learning about infant mortality rates in relation to gross domestic product in countries like Australia, Brazil, Nigeria, Switzerland, and the United States, among others. Chapter 3 covers descriptive epidemiology and includes an example of a typical form completed to record a death. Study designs for public health, including randomized controlled trials, are covered in Chapter 4. Chapter 5 covers various measures of association. In Chapter 6 one learns about interpreting p-values and confidence intervals, and nuances associated with the p-value noting its high dependence on the size of the study. Chapter 7 covers sources of error and Chapter 8 describes the challenge of confounding in studies. Chapter 9 covers the reading and writing of epidemiological papers, and Chapters 10 and 11 introduce association, causation, and systematic reviews. In a fascinating example of causation, the authors ask “Does *Helicobacter pylori* (a bacterium that infects the stomach) cause stomach cancer?” They shed

light on the importance of using the epidemiological studies to come to an answer: indeed, *H. pylori* infection is a cause of stomach cancer. The subsequent chapters cover practical applications (surveillance, outbreaks, disease prevention, and screening). In an important example of disease prevention, the authors report on a multilayered population-based suicide prevention program that was introduced in 1996 and found to be effective in reducing the suicide rate among United States Air Force personnel post implementation.

The concluding Chapter 16 describes the role of epidemiology in translational research. It continues to incorporate cartoons, a fun feature that is used throughout the book. In one example, a cartoon is used to remind us of the challenges of measurement and confounding, with the hope of minimizing dilemmas like the one depicted, as follows: “I haven’t read the health columns this morning. Is coffee *out* or *in* today?” For more knowledge and fun, I invite you to read the book.

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***This is Your Brain on Parasites.*** By Kathleen McAuliffe. New York: Houghton Mifflin Harcourt; 2016, US \$15.99 (Paperback). 304 p. ISBN: 978-0544947252

Immigration, infection, and pets are all involved in the behavior and culture that shapes society. *This is Your Brain on Parasites* is a fascinating and frightening read. The author provides a clear narrative on what we have perceived to be predator/prey food cycles but are the life cycles of many parasites. The author provides examples through a ribbon like fluke that reproduces through egrets and killifish or a flatworm *Leucochloridium* that reproduces through snails and songbirds. In either case, the parasite alters the behavior and/or appearance to make it susceptible to consumption by the predator. The author also accounts for *Toxoplasma gondii* found in the excrement of household cats. This parasite alters the behavior of mice causing recklessness and reduced fear among cats. The parasite then reproduces in the feline small intestine and the cycle continues. More shocking is that this parasite is termed a “dormant infection” within humans